

July 2015

Marshall County

Estimated Economic Impact of Agriculture, Food, and Food Processing Sectors

A total of 17 agriculture, food, and food processing sectors were analyzed to determine their overall contribution to the Marshall County economy.¹ These 17 sectors have a total direct output of approximately \$689 million and support 1,642.9 jobs in Marshall County. Running the model for all 17 sectors simultaneously produces the following results:

Agriculture Contribution in Marshall County

| Impact Type ² | Employment | % of Total Employment | Total Value Added ³ | % of Gross Regional Product ⁴ | Output ⁵ | % of Gross Regional Product |
|--------------------------|------------|-----------------------|--------------------------------|--|---------------------|-----------------------------|
| Direct Effect | 1,642.9 | 22% | \$162,080,763 | 28% | \$689,384,502 | 119% |
| Indirect Effect | 691.8 | 9% | \$51,405,400 | 9% | \$109,903,720 | 19% |
| Induced Effect | 313.5 | 4% | \$20,784,493 | 4% | \$39,511,460 | 7% |
| Total Effect | 2,648.2 | 35% | \$234,270,656 | 41% | \$838,799,682 | 145% |

As shown in the above table, agriculture, food, and food processing supports 2,648.2 jobs, or 35% of the entire workforce in the county. These industries provide a total economic contribution of approximately \$839 million, roughly 145% of Gross Region Product (GRP). As noted below in the calculation of Gross Regional Product, imports and institutional sales are subtracted. Therefore, counties that import a relatively large amount of goods and services will have a reduced GRP which may lead to agricultural output being greater than GRP.

Another metric used to calculate the importance of sectors in an economy is their value added as a percentage of GRP. Total value added by the 17 agriculture, food, and food processing sectors is approximately \$234 million, or 41% of the GRP. This indicates that personal income, business income, and taxes generated by these sectors account for 41% of the total economy.

The following tables document the overall summary numbers of the model, top industries affected by employment and output, and a listing of all industries that were analyzed.

¹ Article on building a contribution analysis in IMPLAN that avoids double counting:
https://implan.com/index.php?option=com_content&view=category&id=19

² Direct, indirect, and induced effects sum together to estimate the total economic contribution in the state. **Direct effects** capture the contribution from agricultural and food products. **Indirect effects** capture the economic benefit from farms and agricultural businesses purchasing inputs from supporting industries within the state. **Induced effects** capture the benefits created when employees of farms, agricultural businesses, and the supporting industries spend their wages on goods and services within the state.

³ Value Added = Labor Income + Indirect Business Taxes + Other Property Type Income

⁴ GRP = Final Demand of Households + Governments Expenditures + Capital + Exports - Imports - Institutional Sales

⁵ Output = Intermediate Inputs + Value Added

In the top ten by employment, Farm machinery and equipment manufacturing is the top employer in the agriculture industry with 749.1 employees. This table also shows the amount of jobs that are created by the agriculture industry in Marshall County.

Top 10 Industries Affected by Employment

| Sector Description: | Total Employment | Total Output |
|--|------------------|---------------|
| Farm machinery and equipment manufacturing..... | 749.1 | \$462,242,477 |
| Grain farming | 354.2 | \$60,558,191 |
| Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming | 243.2 | \$30,772,814 |
| All other crop farming..... | 168.2 | \$10,421,212 |
| Wholesale trade..... | 160.1 | \$31,618,472 |
| Oilseed farming | 63.2 | \$66,779,455 |
| Truck transportation..... | 46.7 | \$7,390,707 |
| Other animal food manufacturing..... | 46.2 | \$67,750,702 |
| Monetary authorities and depository credit intermediation | 46.0 | \$7,534,948 |
| Veterinary services | 40.6 | \$1,957,027 |

The Farm machinery and equipment manufacturing industry directly contributes approximately \$462 million to Marshall County's economy. This table also shows how much revenue is generated in other industries by having a strong agriculture industry.

Top 10 Industries Affected by Output

| Sector Description: | Total Employment | Total Output |
|--|------------------|---------------|
| Farm machinery and equipment manufacturing..... | 749.1 | \$462,242,477 |
| Other animal food manufacturing..... | 46.2 | \$67,750,702 |
| Oilseed farming | 63.2 | \$66,779,455 |
| Grain farming | 354.2 | \$60,558,191 |
| Wholesale trade..... | 160.1 | \$31,618,472 |
| Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming | 243.2 | \$30,772,814 |
| All other crop farming..... | 168.2 | \$10,421,212 |
| Monetary authorities and depository credit intermediation | 46.0 | \$7,534,948 |
| Truck transportation..... | 46.7 | \$7,390,707 |
| Owner-occupied dwellings | 0.0 | \$7,241,507 |

Below is a summary of all agriculture data with employment levels and output level. These values can tell how many jobs are represented by each agriculture sector and the output they contributed to Marshall County's economy.

[illegible]

All 105 counties in Kansas have IMPLAN models with an agriculture contribution summary. These values do not factor in the retail environment of food sales. Food retail is important, but in order to provide the most accurate picture of what production agricultural and processing contributes to Kansas, the retail sector was omitted.